

CLAIMS

- SUB
B1
1. A method for preparing nanoparticles for use, from a mixture of nanoparticles with another material, the method comprising washing the mixture with a solvent in which the nanoparticles are soluble to remove the said other material and form a solution of nanoparticles in the solvent.
2. A method as claimed in claim 1, comprising separating at least a first fraction of the nanoparticles from a mixture of the solvent and the said other material.
3. A method as claimed in claim 2, wherein the separation is performed by filtration.
4. A method as claimed in claim 2, wherein the separation is performed by dialysis.
5. A method as claimed in claim 2, wherein the separation is performed by centrifugation.
6. A method as claimed in ^{claim 1} ~~any of claims 2 to 5~~, wherein in the separation step the said first fraction of the nanoparticles are separated from another fraction of the nanoparticles.
7. A method as claimed in claim 6, wherein the nanoparticles of the said other fraction are relatively small in comparison to the nanoparticles of the first fraction.
8. A method as claimed in ~~any preceding claim~~ ¹, wherein the said other material is a by-product of the formation of the nanoparticles.
9. A method as claimed in ~~any preceding claim~~ ¹, wherein the said other material comprises a surfactant.
10. A method as claimed in ~~any preceding claim~~ ¹, wherein the solvent is an organic solvent.

11. A method as claimed in ~~any preceding claim~~, wherein the solvent is an alcohol.
12. A method as claimed in ~~any preceding claim~~, wherein the said other material is soluble in the solvent.
13. A method as claimed in ~~any preceding claim~~, wherein the solvent is one in which the said other material is preferentially soluble to the nanoparticles.
14. A method as claimed in ~~any preceding claim~~, wherein the solvent is a polar solvent.
15. A method as claimed in ~~any preceding claim~~, wherein the nanoparticles are generally smaller than 50nm in diameter.
16. A method as claimed in ~~any preceding claim~~, wherein the solvent is such as to hold the dissolved nanoparticles in a disaggregated state.
17. A method as claimed in ~~any preceding claim~~, comprising adding a surface modifying agent to the solution of nanoparticles.
18. A method as claimed in ~~any preceding claim~~, wherein the surface modifying agent is a dye.
19. A method as claimed in ~~any preceding claim~~, wherein the nanoparticles are light transmissive.
20. A method as claimed in ~~any preceding claim~~, wherein the nanoparticles are non-conductive.
21. A method as claimed in ~~any preceding claim~~, comprising adding the solution of nanoparticles to a polymer precursor.

22. A method as claimed in claim 21, comprising converting the polymer precursor to form a polymer body containing a substantially uniform dispersion of nanoparticles.

16 23. A method as claimed in claim 21 ~~or 22~~, comprising treating the polymer to render it insoluble in the solvent.

16 24. A solution of nanoparticles formed by a method according to ^{claim 1} ~~any of claims 1 to 20~~.

25. A polymer precursor material containing nanoparticles, formed by a method according to claim 21.

16 26. A polymer material comprising a substantially uniform dispersion of nanoparticles formed by a method according to ^{claim 1} ~~any of claims 1 to 20~~.

16 27. A polymer material containing a substantially uniform dispersion of nanoparticles, formed by a method according to claim 22 ~~or 23~~.

28. An organic material containing a substantially uniform dispersion of nanoparticles.

29. An organic material as claimed in claim 28, wherein the organic material is a semiconductive material.

16 30. An organic material as claimed in ^{claim 26} ~~any of claims 26 to 29~~, wherein the presence of the nanoparticles influences at least one material property of the organic material.

31. An organic material as claimed in claim 30, wherein the said property is an optical and/or an electronic property.

32. An organic material as claimed in claim 31, wherein the said property is refractive index.

16 → 33. An organic material as claimed in ^{claim 26} ~~any of claims 26 to 32~~, wherein the nanoparticles have a surface coating.

34. An organic material as claimed in claim 33, wherein the surface coating is of a material that influences at least one optical and/or electrical property of the organic material and/or influences the interaction of the nanoparticles with the organic material.

35. A method for tailoring at least one property of an organic material, the method comprising forming a substantially uniform dispersion of nanoparticles in the organic material.

36. A method for forming a solution of nanoparticles substantially as herein described with reference to the accompanying drawings.

37. Organic material containing a substantially uniform dispersion of nanoparticles substantially as herein described.

09743621.040901